Thaw and Culture Details

Cell Line Name	MCW075i-U2096
WiCell Lot Number	WB66541
Provider	Medical College of Wisconsin – Laboratory of Dr. Ulrich Broeckel
Banked By	WiCell
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 3 wells of a 6 well plate.
Culture Platform	Feeder Independent
	Medium: mTeSR™1
	Matrix: Matrigel®
Protocol	WiCell Feeder Independent mTeSR™1 Protocol
Passage Number	p14 These cells were cultured for 13 passages prior to colony picking. WiCell adds +1 to the passage number to best represent the overall passage number of the cells at thaw.
Date Vialed	18-August-2017
Vial Label	MCW075i-U2096 p14 WB66541
Biosafety and Use Information	Appropriate biosafety precautions should be followed when working with these cells. The end user is responsible for ensuring that the cells are handled and stored in an appropriate manner. WiCell is not responsible for damages or injuries that may result from the use of these cells. Cells distributed by WiCell are intended for research purposes only and are not intended for use in humans.

Testing Performed by WiCell

Test Description	Test Provider	Test Method	Test Specification	Result
Karyotype by G-banding	WiCell	SOP-CH-003	Expected karyotype	Pass
Post-Thaw Viable Cell Recovery	WiCell	SOP-CH-305	≥ 15 Undifferentiated Colonies, ≤ 30% Differentiation and recoverable attachment after passage	Pass
Identity by STR	UW Translational Research Initiatives in Pathology Laboratory	PowerPlex 16 HS System by Promega	Defines profile	Pass
Sterility	Steris	ST/07	Negative	Pass
Mycoplasma	WiCell	SOP-QU-004	Negative	Pass

Testing Reported by Provider

The Provider stated that some or all of the additional analyses listed below may have been performed for this cell line. For more information, publication and dbGaP links, where available, are provided on the cell line specific web page on the WiCell website.

- Tra1-60 marker expression
- mRNA expression by qPCR
- Infinium® Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})

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The material provided under this certificate has been subjected to the tests specified and the results and data described herein are accurate based on WiCell's reasonable knowledge and belief. Appropriate Biosafety Level practices and universal precautions should always be used with this material. For clarity, the foregoing is governed solely by WiCell's Terms and Conditions of Service, which can be found at http://www.wicell.org/privacyandterms.

Approval Date	Quality Assurance Approval
10-November-2017	11/10/2017 X JKG JKG Quality Assurance Signed by: Gay, Jenna

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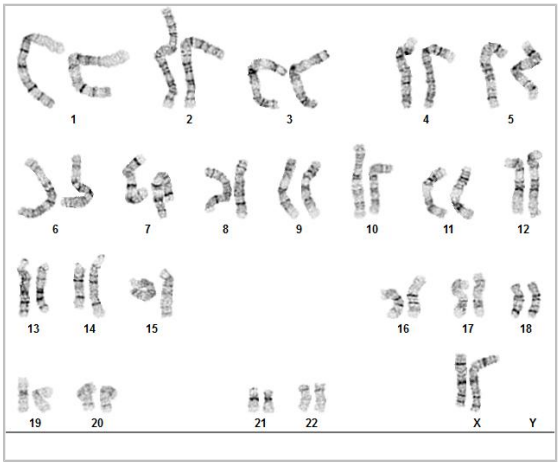
Chromosome Analysis Report: 067733

Date Reported: Friday, September 15, 2017
Cell Line: MCW075i-U2096-WB66541 12781
Passage#: 14
Date of Sample: 8/31/2017
Specimen: Human IPS
Results: 46,XX

Cell Line Gender: Female
Reason for Testing: lot release testing

Investigator: Katie Remondini, WiCell CDM



Cell: 18
Slide: G01
Slide Type: Karyotype

Total Counted: 20
Total Analyzed: 9
Total Karyogrammed: 4
Band Resolution: 425 - 600

Interpretation:

This is a normal karyotype. No clonal abnormalities were detected at the stated band level of resolution.

Completed by: Seth Taapken MS, CG(ASCP)
Reviewed and Interpreted by: Karen Dyer Montgomery, PhD, FACMG

A signed copy of this report is available upon request.

Date:_____ **Sent By:**____ **Sent To:**_____ **QC Review By:** ____

Limitations: This assay allows for microscopic visualization of numerical and structural chromosome abnormalities. The size of structural abnormality that can be detected is >3-10Mb, dependent upon the G-band resolution obtained from this specimen. For the purposes of this report, band level is defined as the number of G-bands per haploid genome. It is documented here as "band level", i.e., the range of bands determined from the four karyograms in this assay. Detection of heterogeneity of clonal cell populations in this specimen (i.e.,mosaicism) is limited by the number of metaphase cells examined, documented here as "# of cells counted".

This assay was conducted solely for listed investigator/institution. The results may not be relied upon by any other party without the prior written consent of the Director of the WiCell Cytogenetics Laboratory. The resu lts of this assay are for research use only. If the results of this assay are to be used for any other purpose, contact the Director of the WiCell Cytogenetics Laboratory.

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Short Tandem Repeat Analysis

School of Medicine and Public Health
UNIVERSITY OF WISCONSIN-MADISON
Department of Pathology and Laboratory Medicine
TRIP Laboratory (Molecular)
http://www.pathology.wisc.edu/research/trip

WiCell®
info@wicell.org
(888) 204-1782

Sample Report:
12781-STR
Sample Name on Tube: 12781-STR
63.5 ng/µL, (A260/280=1.99)
Sample Type: Cells
Cell Count: ~2 million cells

Requestor:
WiCell Research Institute
Quality Department

Sample Date: N/A
Receive Date: 09/05/17
Assay Date: 09/12/17
File Name: 170913 STR WMR
Report Date: 09/15/17

STR Locus	STR Genotype Repeat #	STR Genotype
FGA	16–18,18.2,19,19.2,20,20.2,21,21.2,22, 22.2, 23, 23.2, 24, 24.2, 25, 25.2, 26–30, 31.2, 43.2, 44.2,45.2, 46.2	21,26
TPOX	6-13	8,11
D8S1179	7-18	13,14
vWA	10-22	18,22
Amelogenin	X,Y	X,X
Penta_D	2.2, 3.2, 5, 7-17	11,12
CSF1PO	6-15	11,12
D16S539	5, 8-15	11,12
D7S820	6-14	10,13
D13S317	7-15	8,11
D5S818	7-16	11,12
Penta_E	5-24	7,7
D18S51	8-10, 10.2, 11-13, 13.2, 14-27	13,18
D21S11	24,24.2,25,25.2,26-28,28.2,29,29.2, 30, 30.2,31, 31.2,32,32.2,33,33.2, 34,34.2,35,35.2,36-38	29,32.2
TH01	4-9,9.3,10-11,13.3	6,9.3
D3S1358	12-20	15,17

Results: Based on the 12781-STR cells submitted by WiCell QA dated and received on 09/05/17, this sample (Label on Tube: 12781-STR) defines the STR profile of the human stem cell line MCW075i-U2096 comprising 29 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human MCW075i-U2096 stem cell line were detected and the concentration of DNA required to achieve an acceptable STR genotype (signal/ noise) was equivalent to that required for the standard procedure (~1 ng/amplification reaction) from human genomic DNA. This result suggests that the 12781-STR sample submitted corresponds to the MCW075i-U2096 stem cell line and was not contaminated with any other human stem cells or a significant amount of mouse feeder layer cells.

Sensitivity: Sensitivity limits for detection of STR polymorphisms unique to either this or other human stem cell lines is ~2-5%.

X *RMB* **Digitally Signed on 09/15/17**

Rebecca M. Baus
TRIP Laboratory, Molecular

X *WMR* **Digitally Signed on 09/15/17**

William M. Rehrauer, PhD, Director / Co-Director
UWHC Molecular Diagnostics Laboratory / UWSMPH TRIP Laboratory

Testing was accomplished by analysis of human genetic polymorphisms at STR loci. This methodology has not yet been approved by the FDA and is for investigational use only.
Acknowledge TRIP in your publications, posters & presentations. For details, see: *http://www.pathology.wisc.edu/research/trip/acknowledging*
TRIP agrees to maintain the confidentiality of any information provided to it in connection with its performance of this STR analysis on the same conditions as set forth in paragraph 2 of WiCell's Terms and Conditions of Service (http://www.wicell.org/media.acux/1a429b84-2b54-44a4-8ad8-5c05db93dd8a).

Native Product Sterility Report

STERIS

WiCell
504 S Rosa Rd, Rm 101
Madison, WI 53719

SAMPLE #: 17101392
DATE RECEIVED: 19-Oct-17
TEST INITIATED: 20-Oct-17
TEST COMPLETED: 03-Nov-17

SAMPLE NAME / DESCRIPTION:
UCSD061i-65-1-WB60393 12989
MCW075i-U2096-WB66541 12990
STAN054i-149-2-DB30942 12991
UCSD076i-1-7-WB61578 12992
UCSD078i-1-9-WB60041 12993
UCSD020i-3-8-WB63471 12994
UCSD021i-3-9-WB63625 12995
UCSD181i-3-1-WB59924 12996
UCSD182i-3-2-WB60071 12997
UCSD038i-24-2-WB57681 12998

UNIQUE IDENTIFIER: NA

PRODUCT REGISTRATION: Human iPS cells

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
10	0	2 Negatives

TEST SUMMARY:

# Samples	Media Type	Volume (mL)	Incubation Temperature (° C)	Incubation Duration (Days)
10	TSB	40	20-25	14
10	FTG	40	30-35	14

REFERENCE: Processed according to LAB-003: Sterility Test Procedure

METHOD VALIDATION / PD #: 000053

TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: NA

REVIEWED BY Revised DATE 03NOV17

Specific test results may not be indicative of the characteristics of any other samples from the same lot or similar lots. This test report shall not be reproduced, except in full, without prior written approval. Liability is limited to the costs of the tests.

Mycoplasma Detection Assay Report

Testing Performed by WiCell

Lot Release Testing

August 30, 2017

FORM SOP-QU-004.01
Version F Edition 02
Reported by: KR
Reviewed by: JB
BD Monolight 180

#	Sample Name	Reading A		A Ave	Reading B		B Ave	Ratio B/A	Result	Comments/Suggestions
		RLU1	RLU2		RLU1	RLU2				
1	MCW075i-U2096-WB66541 12781	195	189	192	73	73	73	0.38	Negative	
2	Positive (+) Control	387	395	391	25241	25413	25327	64.77	Positive	
3	Negative (-) Control	573	581	577	66	63	64.5	0.11	Negative